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BULLETIN
OF THE
TORREY BOTANICAL CLUB

SEPTEMBER, 1904

Studies in the Asclepiadaceae—VIII

A NEW SPECIES OF ASCLEPIAS FROM KANSAS AND TWO POSSIBLE HYBRIDS FROM NEW YORK

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(WITH PLATES 16-19)

***Asclepias kansana* sp. nov.**

Stems erect, very stout, canescently tomentose throughout, 2 dm. (or more?) high: leaves approximately opposite, short-petioled; basal blades broadly oblong-ovate, truncate and rounded at the base, obtuse and mucronulate or emarginate at the apex, the upper ones elliptical-oblong, also mucronulate or more often emarginate, the lower ones 13-16 cm. or more long, 9-11 cm. wide, the upper ones 9-14 cm. long and 4.5-9 cm. wide, minutely tomentose or becoming glabrate above, densely canescently tomentose beneath, becoming less so with age, the midvein very broad and conspicuous, the primary veins wide-spreading; petioles stout, 1-1.5 cm. long: umbels several, axillary on the upper part of the stem, peduncled, many-flowered; peduncle 3-7 cm. long; pedicels 2-3 cm. long, tomentose: calyx-segments oblong-lanceolate: corolla-segments (pink-purple?), oblong, 7-8 mm. long, tomentose on the outside; hoods oblong, about 4 mm. long, erect but diverging at the obtuse apex (pinkish?), the lateral margins infolded with a broad obtuse tooth on each side at about the middle, the tips of which meet under the exerted incurving horn; horn falcate, affixed near the base of the hood, and incurving over the edge of the anthers: follicles erect, on recurved pedicles, 8-10 cm. long, 3-3.5 cm. wide, obtuse at the curved apex, densely white-tomentose, echinate with numerous soft spinose processes that vary in length from 3-10 mm.; seeds 8 mm. long. (PLATE 16, FIGURE 4; PLATE 18.)

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Kansas: Fort Riley, *E. E. Gayle* 514, June 24, 1892; Manhattan, Riley County, *W. A. Kellerman*, 1890; Riley County, *J. B. Norton* 762, 1896 (type, in the Herbarium of the New York Botanical Garden.)

A specimen labelled *A. syriaca* L. from Independence, Mo., *B. F. Bush* 355, June, 1895, might be referred here, the leaf-characters being clearly those of *A. kansana*, but the flowers are in too poor condition to study. A specimen from Osborne County, Kansas, *C. L. Shear* 130, June 22, 1894, also labelled *A. syriaca* L., without flowers, appears to belong here.

Differing from *Asclepias syriaca* L. in its broader oblong-ovate and oblong-elliptical leaves, in the erect-spreading hoods that are narrower at the apex, and in the character and greater number of the processes of the densely tomentose follicles.

Asclepias syriaca L. from the Eastern States has longer, narrower, more acute leaves, shorter, more rounded and erect corollahoods and follicles that are much less tomentose and have fewer and much shorter processes. (PLATE 16, FIGURES 1*a* and 1*b*; PLATE 17, FIGURE 1, *a-f*.)

***Asclepias Bicknellii* sp. nov.**

Stems erect, glabrous or strigilose in lines above, glaucous, 3 dm. or more high: leaves opposite, short-petioled; blades oblong or the upper ones elliptical-oblong, 11–16 cm. long, 3.5–8 cm. wide, acute at the apex, truncate or rounded or sometimes subcordate at the base, glabrous or nearly so above, paler, glaucous and sparingly strigilose beneath, undulate on the margins; petioles 2–5 mm. long: umbels terminal and axillary; peduncles 6–9 cm. long, strigilose; pedicels slender, 2–2.5 cm. long, strigose: calyx-segments ovate-lanceolate, acute, glabrate; corolla-segments oblong, 7 mm. long, pale greenish, tinged with purple, glabrous; hoods erect, 4 mm. high, rounded and somewhat pendulous at the saccate base, pale pink, crenately notched or undulate at the apex; horn falcate, flat, arising from the base of the hood, long-exserted over the anthers: follicles not known. (PLATE 19.)

Van Cortlandt Park, New York City, collected by E. P. Bicknell, June 25, 1895. Type in the Herbarium of Columbia University (N. Y. Botanical Garden).

A possible hybrid appearing to be intermediate between *A. syriaca* L. and *A. amplexicaulis* Smith or *A. exaltata* (L.) Muhl. Named in honor of Mr. E. P. Bicknell.

A single plant found growing on a railroad embankment with *A. syriaca* L., "and *A. purpurascens* L. a not distant neighbor" (Bicknell in litt.). Its leaves resemble closely those of *A. purpurascens* L., but with the undulate marginal characters of *A. amplexicaulis* Smith; but the flower and hood characters are nearer those of *A. exaltata* (L.) Muhl. than of any of the other related North-east American species. The leaves of *A. exaltata* are very thin and acute at each end, those of *A. Bicknellii* being more nearly of the texture of those of *A. syriaca*, but without the canescent pubescence of the latter species. *A. exaltata* was not known to grow in the vicinity.

***Asclepias intermedia* sp. nov.**

Stems erect, glabrous, purplish, not glaucous, 3 dm. or more high; leaves opposite, on very short but distinct petioles, or possibly the lowest sessile; blades oblong-elliptical, thinnish, yellow-green and glabrous above, paler and minutely pubescent beneath, the midvein reddish above, the primary veins wide-spreading, also tinged with red, 8-14 cm. long, 3-7 cm. wide, obtuse or the upper ones subcordate at the base, obtuse and apiculate at the apex, most of the margins undulate; petioles 1-3 mm. long; umbels terminal, 2 or more, short-peduncled, or subtended by an upper leaf, 16-24-flowered; peduncles minutely and sparingly pubescent, 2-8 cm. long; pedicels 2.5-3 cm. long, slender, minutely pubescent; calyx-segments ovate, acute, pubescent, especially toward the apex; corolla green-purple, its segments oblong-lanceolate, 6-8 mm. long; hoods erect, ovate-lanceolate, obtuse, 5-6 mm. long, pinkish purple with a darker red or purplish stripe down the back, the lateral margins incurved, each with an erect tooth somewhat above the middle; horn slender, arising from about the middle of the hood, the tips incurved and meeting over the anthers; follicles not known. (PLATE 16, FIGURE 2; PLATE 17, FIGURE 2, *a-f*.)

Lawrence, Long Island, collected by E. P. Bicknell, July 17, 1904. Type in the Herbarium of the New York Botanical Garden.

A possible hybrid. It appears to be intermediate between *Asclepias syriaca* L. (PLATE 16, FIGURE 1 *a*, 1 *b*; PLATE 17, FIGURE 1, *a-f*) and *A. amplexicaulis* Smith (PLATE 16, FIGURE 3; PLATE 17, FIGURE 3, *a-f*). It differs from the latter in its narrower, brighter green leaves that are distinctly petioled and pubescent beneath, and also somewhat less undulate on the margins. The umbels resemble

those of *A. syriaca* in contrast to the long-peduncled terminal umbels of *A. amplexicaulis*. The flowers are intermediate between the two species, with the characteristic distinct stripe down the back of the hood that appears in fresh specimens of *A. amplexicaulis*. The hoods of *A. amplexicaulis* vary very greatly in size, and in the undulations of their apical margins.

NEW YORK BOTANICAL GARDEN.

Explanation of plates 16-19

PLATE 16

1a. *Asclepias syriaca* L., follicle. 1b. *Asclepias syriaca* L., leaf. 2. *Asclepias intermedia* Vail, leaf. 3. *Asclepias amplexicaulis* Smith, leaf. 4. *Asclepias kansana* Vail, follicle.

Figures 1a, 1b and 3 were drawn from fresh material; 2, from the fresh type specimen; 4, from specimen collected by W. A. Kellerman, 1890. All figures $\frac{2}{3}$ nat. size.

PLATE 17

1. *Asclepias syriaca* L. 2. *Asclepias intermedia* Vail. 3. *Asclepias amplexicaulis* Smith.

Figures 1 and 3 were drawn from fresh material; 2, from type specimen.

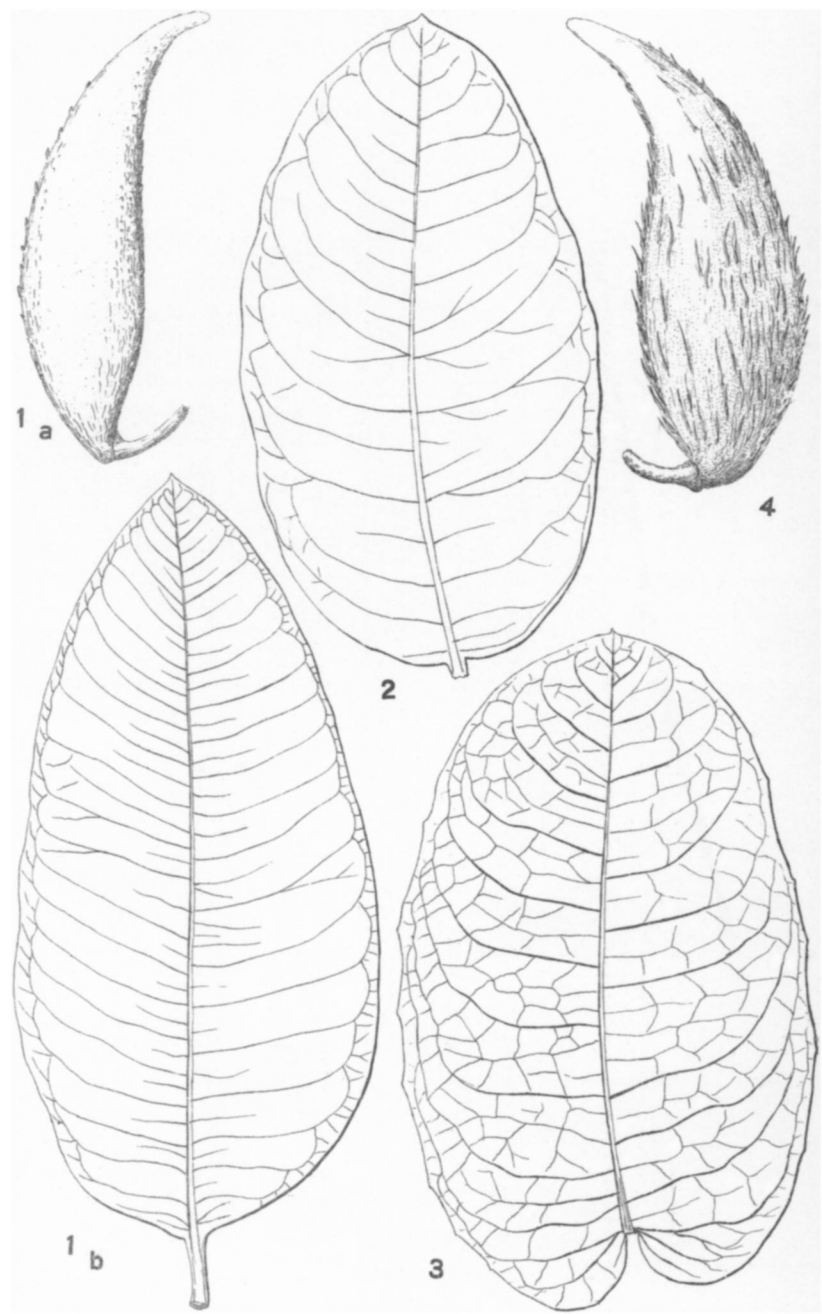
In each case a, flower, $\times 2$. b, calyx-segments, \times about 6. c, hood, front view, \times about 6. d, hood, side view, \times about 6. e, gynostegium, \times about 6. f, pollinia, $\times 14$.

PLATE 18

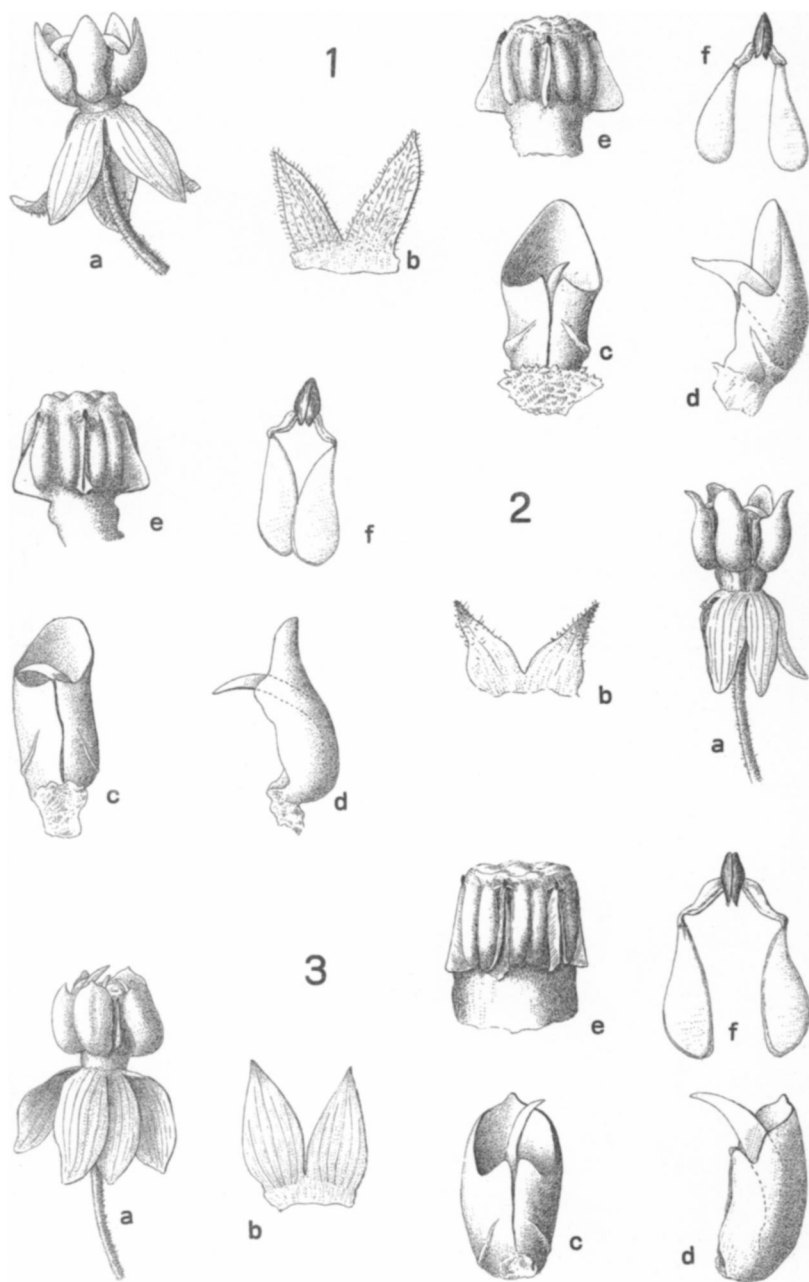
Asclepias kansana Vail. a, flower. b, calyx-segments. c, hood, front view. d, hood, side view. e, gynostegium. f, pollinia. g, basal leaf. h, upper stem leaf. The figures were all drawn from no. 762, collected by J. B. Norton, 1896.

PLATE 19

Asclepias Bicknellii Vail. a, flower. b, calyx-segments. c, hood, front view. d, hood, side view. e, gynostegium. f, pollinia. g, basal leaf. h, stem leaf. The figures were all drawn from the type specimen, when fresh.



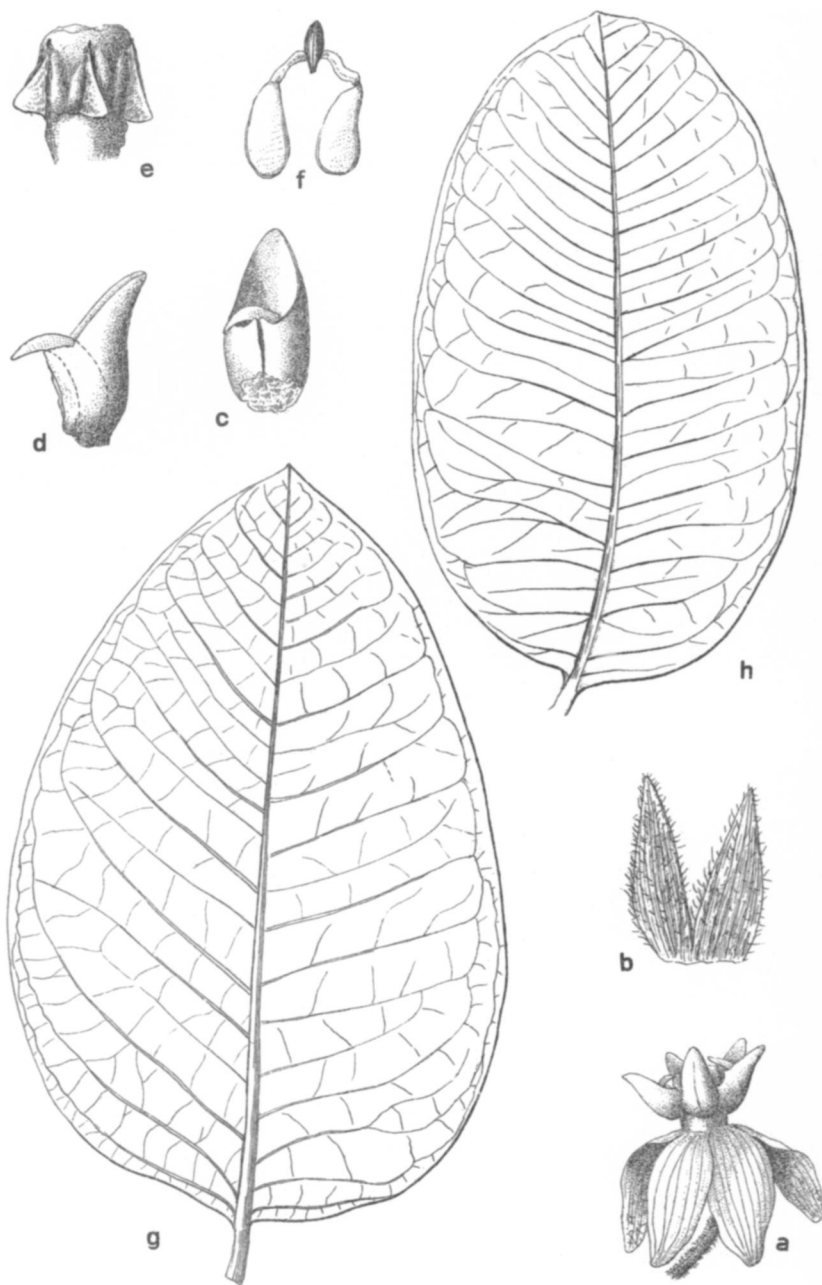
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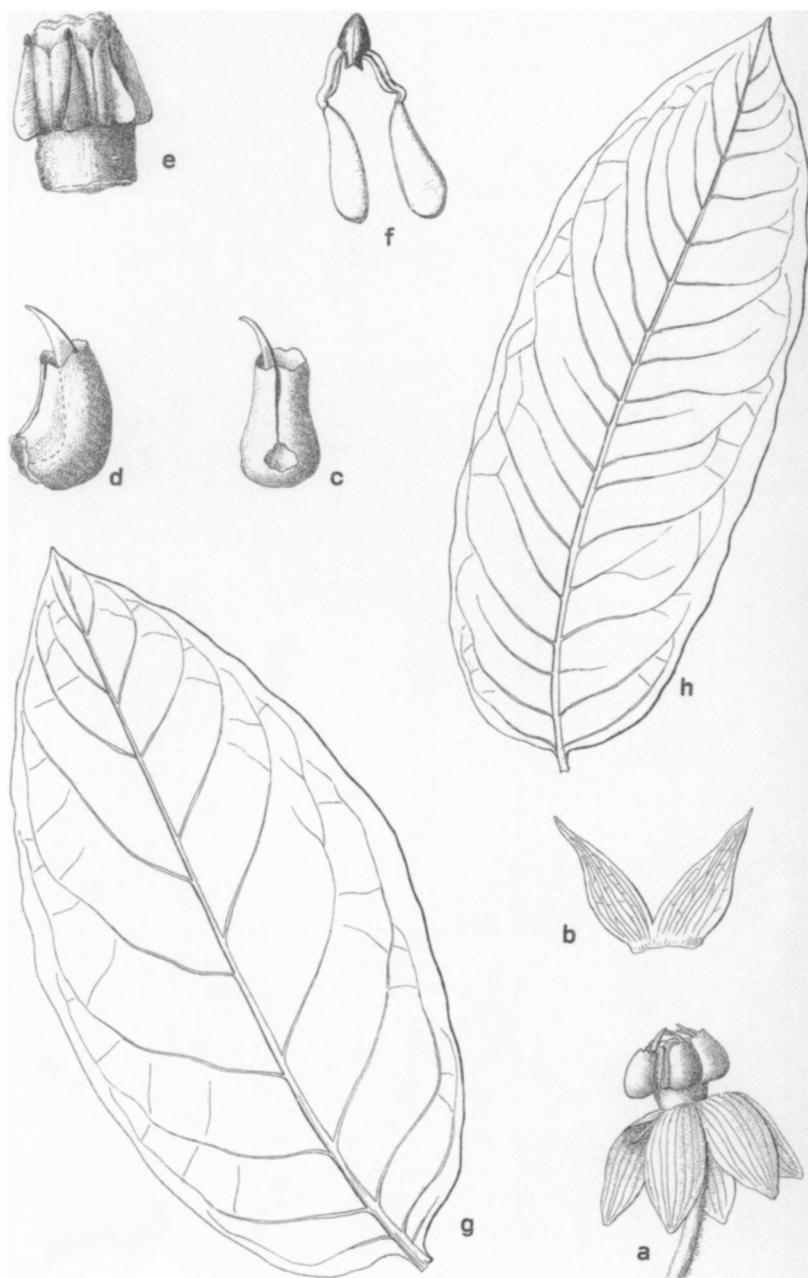
1. ASCLEPIAS SYRIACA L.

2. ASCLEPIAS INTERMEDIA Vail.

3. ASCLEPIAS AMPLEXICAULIS Smith.



ASCLEPIAS KANSANA Vail.



ASCLEPIAS BICKNELLII Vail.